

INTRODUCTION

Staffs of the Columbia Basin Agricultural Research Center (CBARC, Oregon State University, Pendleton and Sherman Stations) and the Columbia Plateau Conservation Research Center (CPCRC, USDA-Agricultural Research Service, Pendleton) are proud to present results of their research. This bulletin represents a sample of the work in progress at these Centers. A collection of bulletins over a three-year period offer a more complete, ongoing assessment of the productivity and applicability of this research and education. Changes in staffing, programming, and facilities at these Centers during the past year are summarized below.

Promotions and Awards

Neither promotions nor awards were presented to staff of Oregon State University during the reporting period. Among USDA staff, certificates of merit and cash awards were given to Dr. Stephen Albrecht for strong leadership in team research to evaluate and oversee long-term, no-till experiments; to Dr. John Williams for creative, multiagency, research on the Umatilla River Watershed and for development of a unique rainfall simulator; to Paul Rasmussen for outstanding work in technology transfer; to Richard Greenwalt for suggesting, purchasing, and installing computer software that linked Pendleton to the Corvallis administrative office and also for installing and administering the new telephone system; to Patricia Frank for her work in Civil Rights training; to Kim Miller for her outstanding work ethic and overall quality of output during last summer's wheat harvest; and to Robert Correa for developing a unique switching system to activate runoff and sediment samplers.

Staff Changes

Many changes occurred in OSU staff during 1998–1999. Dr. Rolando Descalzo served as a Research Associate in the Plant Pathology Program from March until July 1998. Ms. Lisa Patterson resumed employment in the Plant Pathology Program. Dr. GuangLong Feng served as a Research Scholar in the Cropping Systems Program directed by Dr. Bill Payne. Dr. Feng is an Associate Professor at the Yucheng Comprehensive Experimental Station in Beijing, Peoples Republic of China. His credentials in plant-water relations aided in the cropping systems research at Pendleton. Ms. Connie Schrandt served as a Faculty Research Assistant in the Dryland Cropping Systems Agronomy Program directed by Dr. Don Wysocki. Ms. Schrandt arrived in May and departed in September to accept a position with the Oregon Department of Environmental Quality. Mr. John Muth terminated employment as the Trades Maintenance Worker 2 at Pendleton; the functional title for this position is OSU Facilities and Equipment Manager. Mr. Paul Thorgersen became employed in this position during May; Mr. Thorgersen brought into this position an extensive experience with the farm equipment repair industry in Umatilla County. Ms. Karen Morrow, who resigned as Biological Research Technician III during October, had the functional title of Cereals Breeding Coordinator and had managed the Pendleton Station's contracts with the OSU Statewide Cereal Testing Program and the USDA-ARS Regional Club Wheat Breeding and Genetics Program. Mr. Scott McDonald was employed into the Cereal Breeding Coordinator position. Mr. McDonald is a

native of Summerville, OR and received the M.S. degree in Plant Breeding at Washington State University. Mr. Darrin Walenta resigned his position as Senior Faculty Research Assistant in the Weed Science research program during August. Mr. Walenta entered an M.S. degree program at Washington State University. Mr. Greg Harris was employed into the technical position in the weed science program. Mr. Harris, a native of eastern Washington, is a graduate of Eastern Oregon University and brought into the program his work experience in commercial agriculture. Temporary employees in OSU programs during the reporting period included Sandra Alderman, Timothy Alderman, Alec Bailey, Charlene Clemmens, Brian Currin, Renee Foden, Jared Frank, Mark Easley, Andrea Haley, Bryce Herinckx, Kyle Grogan, Kevin Johnson, Jodi Justus, Brandon Kellogg, Matthew Millar, Russell Montgomery, Keely Moon, Justin Richards, Bryan Rodriguez, Nick Sirovatka, Kari Snyder, Bill Thurman, Sascha Usenko, Wenxin Wang, Amy Wasson, Lori Wasson, and Jacquelyn Zollner.

There were several additions and changes in USDA staff during 1998–1999. Melissa Wood accepted a 180-day appointment as an Engineering Technician to work for Dr. Dale Wilkins in April 1998. Virginia Bramlett accepted a 90-day appointment as a Biological Science Aid to work for Dr. Stewart Wuest in April 1998; her position was extended until November 1998. Judy Elliott filled the part-time Office Automation Assistant position and Stephen Osborn filled the Physical Science Technician position in June 1998. Dan Durr was employed on a 180-day appointment to design a system that more accurately characterizes the release of carbon dioxide from soil during tillage. In May 1998, Eric Nicita resigned as Hydrologic Technician to accept a position with the Forest Service. Joy Matthews, a 180-day appointee, filled the Hydrologic

Technician position in November 1998. Katherine Skirvin, Biological Science Technician Plants, went from part-time to full-time status in September 1998. Kevin Collins, Sarah Fife, Mishelle Freston, Sarah Heidt, Kate Holsapple, Jennifer Kirby, Staci Loiland, Jason Meunier, Kim Miller, Leslie Pollard and Byron Wysocki worked as temporary employees during the summer and school vacations. Dr. Mark Siemens accepted an Agricultural Engineering position in January 1999. Paul Rasmussen, Soil Scientist, retired 1 January 1999 with 38 years of Federal service.

New Projects

Modern procedures for the diagnosis of plant pathogens and diseases are being introduced into the Plant Pathology Laboratory. Equipment purchased by the Oregon Wheat Commission was installed to increase the precision and speed for identifying pathogens in root disease complexes and for bolstering wheat seedling screening procedures to identify sources of genetic resistance to Fusarium foot rot and Rhizoctonia root rot. This activity will be used to create further linkages between the pathology and wheat breeding programs.

ARS Headquarters granted the Columbia Plateau Conservation Research Center a two-year, post-doctoral position in agricultural economics to investigate financial aspects of agricultural sustainability in the Pacific Northwest, including reduced tillage and conservation tillage systems. A project was started to develop a carbon sequestration model that will compute the decomposition rate and soil carbon residence time based on antecedent organic matter, crop residues, crop roots, and organic carbon containing amendments such as compost, manure, or sewage sludge.

Facilities and Equipment

Several ongoing improvements were made to OSU facilities and equipment and vehicle inventories. The most noticeable change involved an extensive improvement in the landscaping at Pendleton. Trees were removed to address safety and tree-health concerns, and the windbreak and shrubs near buildings were pruned to improve maintenance efficiency and appearance. A new roof was installed on the automotive shed, and a new office was constructed in the OSU shop to improve operational efficiency. Efforts are currently underway to design and construct a water treatment facility to correct high nitrate concentrations and coliform bacteria contamination in the OSU water supply. Equipment added to the OSU program included a new 1-ton truck, John Deere 7300 no-till drill, customized John Deere 880T swather, Kubota 3410 tractor, and John Deere G20 tandem disk.

A committee led by Tami Johlke designed and ordered the new sign that now perches on the front lawn. Two laboratory incubators were purchased for the microbiology laboratory. Several maintenance and repair projects were undertaken this year. The inside of the main office building was painted, metal shop bay was insulated, exterior doors were replaced with ADA compliant doors, the 26-year old air conditioner compressor was replaced, and electrical surge protectors for the well pump, air conditioner compressor and air handling fan motor were installed. A Conserva Pak no-till seeder with capabilities to accurately place seed and fertilizer was added to our line of field equipment.

Training

OSU staff continued to maintain training requirements for pesticide application

licenses, first aid, and cardiopulmonary resuscitation. Gloria Eidam travelled to Corvallis for training with the OSU Human Resources system, Judy Elliott received additional training in computer technology, and Paul Thorgersen was trained in safety and regulations for public water systems.

All USDA staff licensed to apply pesticides completed recertification training. All staff received updates on cardiopulmonary resuscitation, first aid, ethics, and civil rights training. Dr. Steve Albrecht, Dr. Dale Wilkins, Dr. Clyde Douglas, Paul Rasmussen, and Dr. Ron Rickman received training in statistics from Linda Whitehand, ARS Regional Statistician. Patricia Frank, Judy Elliott, and Bob Correa attended a one-day course on "Microsoft Office." Stephen Osborn attended a weeklong training session on global positioning systems. Dr. John Williams attended two seminars, entitled "Project Management" and "Team Leadership." Bob Correa, Tami Johlke, Daryl Haasch, Roger Goller, and Dr. Dale Wilkins attended a seminar, entitled "Safety Stewardship." Patricia Frank attended two, one-day seminars, entitled "PowerPoint Presentations" and "Business Writing." Dr. John Williams and Dr. Ron Rickman attended an NRCS training session on AGNPS, a model for estimating the distribution and source of agricultural nonpoint source pollution, in Portland. Dr. Dale Wilkins attended a training session on ground-penetrating radar.

Visitors

The Center hosted several special events, including an OSU Cereal Research Review; NRCS Research Review; staff enrichment training sessions (first aid, CPR); OSU administrator's participation in the Pendleton Roundup; temporary employee orientation; Umatilla County Smoke

Management Task Force hearing; STEEP's Technical, Grower, and Administrative Coordinating Committees; and numerous research and planning meetings.

Distinguished visitors hosted by the staff at the enter included: Dr. Antoinette Betschart, Area Director, USDA-ARS-Pacific West Area, Albany, CA; Darrel Temple, USDA-ARS, Stillwater, OK; Linda Whitehand, ARS Regional Statistician, Albany, CA; Jeri Berc, Special Assistant to the Deputy Chief for Soil Survey and Resource Assessment, NRCS, Washington, D.C.; Tony Ingersoll, NRCS, Pullman, WA; Sowgi Ral Rubal, Chiboub Taouak, Ben-Sghayer Laafif and other members of a wheat industry delegation from Tunisia; a thirty-member team of Japanese wheat purchasing agents and export representatives from Portland-based shippers, Richard Fritz and Wendy Kam of the Oregon Wheat League, and Daren Coppock, Oregon Wheat Growers League; Shigeto Nakashima and Zen Bakuren, members of Kinichiro Katoh, All Japan Barley Processors Association, Tokyo; Mark Rhodes, Soft-Slick Custom Computing, Hermiston, OR; Tommy Mitoma and Kerji Ohno of the Mitsubishi Corporation, Tokyo, Japan; Carlos Queueir and Encio Hidelgo of Ecuagran, and Felipe Vergara of Grupo Superior, Quito, Ecuador; and Pablo Malvenda, U.S. Wheat Associates, Santiago, Chile.

Seminars

The 1997 OSU/ARS Seminar Series at the Center was coordinated by John Williams. Seminars included the following speakers and subjects:

Understanding Connections between Management Practice and System Function: The Key to Successful Conservation Cropping Systems; Dr. Dave Huggins, Soil Scientist, USDA-ARS, Pullman, WA; 18 March.

Wheat Breeding and Genetics for Improving Wheat Quality and Production in the Pacific Northwest. Dr. C. James Peterson; 21 May.

Introduction to Flora I.D. Northwest Software; Bruce S. Barnes, Pendleton, OR; 14 July.

Root Shoot Interrelationships at Whole Plant Level; Dr. GuangLong Feng, Associate Professor at the Yucheng Comprehensive Experimental Station in Beijing, Peoples Republic of China; 22 September.

Cable Drawn Farming: System Analysis and Control Development; Dr Mark Siemens, Agricultural Engineer, Tifton, GA; 9 October.

No-Till in the Pacific Northwest and in Chile; Dr. David Bezdicek, Professor, Crop and Soil Science, Washington State University, Pullman, WA; 13 October.

The New ARS/NRCS Partnership Management Team; Dr. Jim Bonta, Research Hydraulic Engineer, USDA-ARS, North Appalachian Experimental Watershed, Coshocton, OH; 12 November.

Discussion of Wheat Breeding Philosophies and Future Research and Marketing Needs for the Pacific Northwest; Dr. Jack Brown, Associate Professor and Brassica Breeder, Department of Plant, Soil, and Entomological Sciences, University of Idaho, Moscow, ID; 24 November.

Breeding Wheat for Improvement of Starch Quality; Dr. Fred Stoddard, Australia National Cooperative Research Center for Quality Wheat, University of Sydney, Australia; 4 December.

Evaluations of Barley for Reaction to Fusarium graminearum; Dr. C. Kent Evans, Postdoctoral Research Associate, Department of Plant Pathology, University of Minnesota, St. Paul; 7 December.

Breeding Soft Red Winter Wheat for Resistance to Fusarium Head Blight and Product Quality; Dr. Kim Campbell, Wheat Breeder, Ohio Agricultural Research and Develop. Center, Wooster, OH; 8 December.

Bacterial Ring Rot: Alternative Strategies for Disease Management; Garreth Redgrave, Crop Production Specialist, Cenex/Land O'Lakes, Inc., Chinook, MT; 11 December.

Documenting Soil Quality Changes in the Transition to No-Till: 16 Years versus First Year No-Till and conventional tillage Near Pendleton, Oregon; Dr. Stewart Wuest, Soil Scientist, USDA-ARS, Pendleton, OR; 23 December.

Factors Affecting Colonization of Soybean Roots by Calonectria ilicicola and Development of Red Crown Rot Disease; Dr. Pali Kuruppu, Postdoctoral Scientist, Department of Plant Pathology, Louisiana State University, Baton Rouge, LA; 3 March.

A Look at Some Aspects on Fusarium Ear Rot and Septoria tritici Blotch; Dr. Chibwe Chungu, Postdoctoral Scientist, Winnipeg Research Center, Agriculture and Agri-Food Canada, Winnipeg, Manitoba; 5 March.

Topics of Importance in Higher Education and Agriculture; Dr. Lyla Houglum, Dean of Extended Education and Director of the

Oregon Extension Service, Oregon State University, Corvallis, OR; 8 March.

Molecular and Cultural Analysis of Bacterial Diversity Associated with Ectomycorrhizae of True-Fir Seedlings Following Wildfire in Central Interior British Columbia; Dr. Madhukar Khetmalas, Postdoctoral Scientist, Natural Resources and Environmental Studies Program, University of Northern British Columbia, Prince George, B.C.; 9 March.

Coat Protein-Mediated Resistance to Wheat Streak Mosaic Virus in Soft White Winter Wheat; Dr. Paul McCarthy, Postdoctoral Research Associate, Department of Plant, Soil and Entomological Sciences, University of Idaho, Moscow, ID; 17 March.

Topics of Importance in Higher Education and Agriculture; Dr. Jim Zuiches, Dean of the College of Agriculture and Home Economics, Washington State University, Pullman, WA; 22 March.

Molecular Detection of Plant Pathogens and Disease Control; Dr. Dara Melanson, Senior Research Scientist, Molecular Plant Pathology and Tissue Culture Laboratory, South Australian Research and Development Institute, Adelaide, Australia; 26 March.

Topics of Importance in Higher Education and Agriculture; Dr. Paul Risser, President, Oregon State University, Corvallis, OR; 29 March.

Liaison Committees

The Pendleton and Sherman Station Liaison Committees have region-wide representation and provide guidance in decisions on staffing, programming and facilities and equipment improvement at the stations. Membership is appointed by the Director of the Oregon Agricultural

Experiment Station and also, at Pendleton, by the Director of the Pacific West Area, USDA-ARS. These committees provide primary communication links among growers, industry, research staff, and their parent institutions. The Committee Chairs and OSU and USDA administrators encourage and welcome your concerns and suggestions for improvements needed in any aspect of the research centers or their staffs.

The Pendleton Station Liaison Committee is coordinated by Chairwoman Kay Simpson (Pendleton: 541-276-3507) and the Sherman Station Liaison Committee is coordinated by Chairman Ernie Moore (Moro: 503-565-3202).

Acknowledgements

The staff expresses their appreciation to individuals, associations and corporations who have given special assistance for the operation of experiments on or associated with the Center during 1998–1999. The Oregon Wheat Commission continued to provide the critical support upon which the Center's OSU projects are founded. Thanks are also given to those who donated additional equipment, funds, labor, seed, and/or chemicals (*Dr. Betty Klepper, Leroy and Cathie Martin, American Cyanamid Co., BASF Corp., Bayer Corp., Novartis, E. I. duPont de Nemours, Marsh Aviation, Zeneca, Umatilla-Morrow Community Corrections Work-Release Program*) or loaned equipment, services, or facilities (*Richard Lieuallen, Earl Brown, Mid-Columbia Producers*).

We express our appreciation and thanks to those who donated labor, supplies, equipment or funding for the Pendleton Station Field Day: *American Cyanamid Co., BASF Corp., Bayer Corp., E. I. du Pont de Nemours & Co., Farm Credit Services, Farm Equipment Headquarters, Gustafson Inc.,*

Huntington-Price, Inland Chemical Service, Inland Empire Bank, Novartis Crop Protection, Novartis Seed Treatment, Pendleton Main Street Cowboys, Monsanto Co., Pendleton Bus Co., Pendleton Flour Mills, Pendleton Grain Growers, Rohm and Haas Co., Smith Frozen Foods, The McGregor Co., Umatilla County Wheat Growers League, Walla Walla Farmers Coop., Western Farm Service, Western States Equipment, Wheatland Insurance, and Wilbur-Ellis Co.

We also appreciate and thank donors who provided buses, meals, and other services for the Sherman Station Field Day at Moro: *Cascade Ranchers, Columbia River Bank, Farm Credit Services, Gustafson Inc., Klamath First Federal Bank, Klickitat Valley Grain Growers, Mid-Columbia Bus Co., Monsanto Co., Morrow County Grain Growers, Novartis Crop Protection, Richelderfer Air Service, Safeway, Sherman Aviation, Sherman County Fair, The Halton Co., UAP Pacific, United Sewerage Agency, Wasco Electric Coop., Western Tillage Equipment Co., and Wilbur-Ellis Co.*

Cooperative research plots at the Center were operated by Warren Kronstad, Patrick Hayes, Chris Mundt, Dan Sullivan, and Russ Karow. Additionally, we are very thankful for the ever-present assistance from the Extension Service personnel in all counties of the region, and especially from the following counties: Umatilla (*Mary Corp, Tom Darnell, and Jeff McMorran*), Union/Baker/Wallowa (*Gordon Cook*), Morrow (*Kathryn Kettel*), Sherman and Wasco (*Sandy Macnab*), and Gilliam (*Jordan Maley*) counties in Oregon; and Columbia (*Roland Schirman*), Adams/Lincoln (*Bill Schillinger*), Walla Walla (*Walt Gary*), and Whitman (*John Burns*) counties in Washington.

We also wish to thank the 30 farmers who have allowed us to work on their properties during the past year. They have performed field operations, loaned equipment, donated chemicals, forfeited yield, and adjusted their practices to accommodate our experiments. The locations of these off-station plot sites are shown on the map that follows.

We truly appreciate the support and encouragement of growers, organizations, and

businesses with a mission common to ours: to serve in the best manner possible the crop production and resource conservation needs of our region. We welcome your suggestions on how we may continue to improve our attempts to reach this goal.

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